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Executive summary

On June 14, 2016 the European Commission, DG Joint Research Centre, organised an exploratory seminar on exchange and financing of intellectual property assets with the participation of around a 100 experts from industry, academia and financial institutions. The main conclusive points of from the seminar are summarised below.

- There is common agreement that a higher degree of liquidity is required to unravel the full potential of intellectual property assets. A number of advantages are foreseen in relation to the function of intellectual property as an asset *on a par* with any other tradable asset. A well-functioning IP asset market would make a greater number of valuable inventions available for the market, with the result of stoked innovation
- More efficient securitisation using IP would provide a novel means of financing RD&I that is neither debt nor equity finance, which could bolster SME growth, as well as provide funds for capital and patience intensive undertakings, such as the development of new medicines. A solid new asset class in the market should also energise the securitisation market, which is steadily growing in the US and Asia, while still remaining relatively curtailed in Europe. Thus, the establishment of a European public institution acting as a guarantor for securities, as is the case in the US and in Asia, is called for
- Particularly in the case of patents, the asset market needs to clear before full-fledged securitisation can take place, and this is to a great degree dependent upon the accurate and transparent valuation of IP. This may justify an appeal for European level regulation of a provision for certification of IP asset valuers, as well as to develop standardised methods for valuation to increase transparency
- A number of obstacles currently preclude IP exchange platforms from working optimally. These include the difficulty for sellers and buyers to swiftly identify one another, contract negotiation is too onerous a process, there is a lack of agreed standards and lucid deal terms, too few patents are listed and there is no possibility to bundle patents, price fixing is not achievable. In addition, due diligence or validity guarantees are absent
- Changes in the international legal frameworks are needed to fully accommodate IP as a traded asset, which likewise would embrace actions to increase patent quality. Weak, defensive and blocking patents need to be kept out of the market
- The intangibles based economy needs rebalancing, in order to establish patents as instruments mainly for technology transfer and as financial assets, and not merely as a means of protection and legal redress. In relation to the use of IP as collateral in a well-functioning IP financial market, knowledge of and confidence in this asset needs to spread in the finance and commercial communities.

Introduction

This report summarises presentations and discussions that took place during the IP Exchange and Finance workshop in the European Commission's Van Maerlant Building in Brussels, on June 14, 2016. The event was jointly organised by the European Commission's DG Joint Research Centre (JRC) and DG RTD, with support by and participation of members of the European TTO Circle.

Intellectual property, as well as knowhow and knowledge in general, have become key assets of advanced economies, but to this day the creation of standardised IP market institutions – as there are in markets for capital, land and labour – remains highly a complex and controversial quest. Up until now intellectual property has been traded in an ad-hoc manner and the IP trading landscape has been characterised by severe informational asymmetries, lack of transparency, and high transaction costs.

Participants benefited from the involvement of the various invited speakers, a combination of TTO Circle members and experts from academia, finance, public authorities, and intellectual property advisory services, as well as from the Q&A sessions.

This report takes into account presentations from the different workshop panels, along with observations and ideas from discussions that arose among participants. Presentations can be found at and downloaded from the website <https://ec.europa.eu/jrc/en/event/workshop/ip-exchange-and-finance-contribution-innovation>.

The workshop considered challenges and opportunities represented by platforms and tools for IP exchange and IP based finance. It hosted a variety of keynote speakers with experience in patent, copyright and IP markets in general, and it also brought together a number of representatives of IP trading and finance initiatives. The objective was to increase comprehension with regards to this realm in Europe, along with an analysis and discussion on possible options for action at the EU level.

The **introductory panel** *IP Exchange and Finance: An Untapped Opportunity* by **Giancarlo Caratti** (DG Joint Research Centre) laid the foundation for the workshop by way giving a general overview of the workshop structure and the topic.

The **first panel** focused on *Intellectual Property for Innovation in the Knowledge Economy*, and was moderated by **Patrick McCutcheon** (DG Research and Innovation).

The **second panel** explored the subject of *Intellectual Property Exchange*, with **Mattias Dinnetz** (DG Joint Research Centre) as moderator.

The **third panel** comprised presentations and discussions on *IP Finance and Securitisation*, with moderation by **Vygandas Jankunas** (DG Research and Innovation).

Giancarlo Caratti moderated the **last part** of the workshop, the discussion on *Possible Ways Forward at EU level* and *Closing Remarks*, with **Patrick Terroir** and the panel moderators **Patrick McCutcheon**, **Mattias Dinnetz**, and **Vygandas Jankunas**.

Introduction: IP Exchange and Finance: An Untapped Opportunity

The workshop was opened by **Giancarlo Caratti**, Head of the Intellectual Property and Technology Transfer Unit of the European Commission's Directorate General Joint Research Centre (JRC). Panellists included **Maive Rute**, **Robert Madelin**, and **Will Hutton**.

The JRC Deputy Director General **Maive Rute** spoke on the JRC's role as a producer of scientific evidence for the policy making and policy implementing processes. She also expanded on the JRC's responsibilities in relation to the protection and management of the EC's intellectual property – copyright, trademarks, and patents – as well as on the work in connection with technology transfer. Mrs Rute then explained that the reason for bringing the theme of IP finance and IP exchange mechanisms to attention, by means and in the format of a workshop, was to trigger discussion and advance understanding in order to support investment in innovation and in the creation of jobs.

Intangible assets make up a growing share of the economy globally, yet large part of patents is not commercialised. Moreover, the risk of litigation can be a hurdle to the use of patents for collateralisation and securitisation, as are the difficulties involved in valuing and exchanging IP. There is a need for the public sector to get involved in order to improve conditions for IP finance and IP exchange.

Robert Madelin, Senior Advisor for Innovation at the European Commission, provided an overview of the workshop context and associated challenges. He described the field of IP finance and exchange as one that is fast moving and complex, for which reason it is particularly important to do proper research so as not to overlook any crucial issues.

While the sector provides extensive untapped opportunities, it is also marred by intrinsic innovation related problems dating back to the 19th century. This is mainly embodied in the dichotomy that consists of, on the one hand, often exaggerated expectations by small innovators as to the value of their solutions, and on the other, small innovators getting swindled by large corporations. Other issues include cooperative problems on pricing and standard essential patents, as well as unjustified litigation. Problems are further aggravated in the internet era due to enforcement issues; SMEs do not become internet companies because of uncertainties regarding misappropriation of trade secrets and troll behaviour. Furthermore, it is also necessary to be aware of the fact that not everyone agrees with the concept and systems of intellectual property.

The main issue at stake, thus, is how to counter these problems and to create a more smoothly functioning market with increased transparency. One suggested action is to convene closed door, discrete discussions with key actors in the field to build trust and understanding.

Will Hutton, Chairman of the Big Innovation Centre, elaborated on the importance of unleashing the underlying potential of intellectual property for a solid European wide SME sector to build. A number of conditions need to be taken into account to properly support this process, for example, the growing importance of knowhow, intangible assets as a main driver of growth, the role of SME's as the backbone of the future economy, and the key role of improved valuation of IP for the releasing of novel, more flexible finance directly linked to the innovativeness of purposeful start-ups and scale-ups. Such financing solutions are fundamental to growth, and, moreover, would also give political legitimacy of contemporary capitalism.

Mr Hutton further dealt with the emergence of General Purpose Technologies (GPT's) through history, and the key role of SME's in the incorporation and deployment of such technologies to meet the Grand Challenges of the 21st century.

The main challenges for well-functioning IP finance and exchange are the creation of liquid and transparent markets for IP and knowhow, building trust among crucial actors, the education of the financial sector with regards to IP related issues, and improved

valuation, reporting, and accounting standards for IP so as to increase SME investment readiness.

Panel 1: Intellectual Property for Innovation in the Knowledge Economy

Panellists included **Patrick Terroir**, **Ian Brewer**, **Nikolaus Thumm**, **Ludo Deferm** and **José María Fernández**, and **Patrick McCutcheon** acted as moderator.

Patrick Terroir, Chair, Patent and Technology Licensing Committee, Licensing Executive Society International, set the scene for the session with a number of observations, including the following: Today we witness more and more innovation and combinations of inventions. The world is becoming increasingly ingenious overall, although certain regions experience more intensive growth. For example, the total number of researchers in Asia is now larger than that of the US and EU combined. The complexity of innovation is such that rarely is there a single inventor for any given innovative product or service, and hence there is a need to exchange and bundle inventions and intellectual assets that stem from different sources – what could be called a “market” for technology and their related IPRs seem now a necessity.

While the share of the total economy that is made up of intangibles is increasing rapidly, the economy of invention and associated intellectual property is not working ideally. As sufficient exchange to optimally support economic and societal progress does not occur, this currently is a deep seated problem for society and the world at large. The opacity is the result of difficulties to identify supply and demand of inventions, along with confidential nature of transactions (e.g., price and legal conditions). In what is an opaque market, many business models have been attempted but none so far has been seen to offer a solution to a more liquid market in transactions. All projects have met detrimental limitations. In the case of open IP exchange platforms, issues include too few patents listed, lack of possibility to bundle patents, no possibility to fix prices, and absence of due diligence or validity guarantees. In fact, the current situation can be likened with a warzone, in which large corporations and strong SMEs have the upper hand due to financial strength dependent upon market share. It appears as if SMEs spun out from universities have the greatest problems in accessing invention exchanges and IP monetisation, in full contradiction with their leading role in innovation for the economies.

A main challenge is then to rebalance the intangibles based economy: the main focus should be to establish a new system in which the patents are not only a protection and legal redress net but also a technology transfer instrument and a valuation and transaction asset. The current litigious climate should be replaced by the originally conceived idea that the role of the patent system is to promote innovation. Thus, the challenge now is to create an ecosystem with appropriate tools and intermediaries to match supply and demand and, above all, to assure access for SMEs to it. The key issue is to create the conditions to provide this transparent, open and secure system where pricing is predictable and contract offer transparent and secure because if not, insurance or securitisation will not be possible. Granularity and geographical presence of exchange must increase in order for the knowledge market ecosystem to emerge.

Ian Brewer, Partner in Valuation Consulting, stressed that valuation of intellectual or intangible assets is of key importance to the liquidity of the IP market. The main question is whether the valuation work being carried out is suitably robust for unlocking the IP market. One main message is that valuation is not an exact science but rather an art; valuation produces a range of values with a minimum and a maximum value.

Mr Brewer added that valuation means different things to different people and is needed for different purposes, and furthermore valuation is highly dependent upon the context, thus producing dissimilar values that are contingent upon the underlying framework and assumptions. So valuation could be done for reasons of, e.g., tax, investment,

accounting, and divorce. Moreover as it is not a regulated activity, it can be performed by anybody with the result of further variances in values and quality of valuation. In the UK the Royal Institute of Chartered Surveyors now have a specific IP section and in the future to be a member exams and interviews need to be passed. In the US changes are foreseen, as the Securities and Exchange Commission (SEC) has expressed that there is a need for qualified valuers, and there are now attempts to regulate this activity.

A particular problem presents itself when it comes to the valuation of IP-rich SMEs, which frequently are university spinoffs. It is not possible to properly value such companies, as they are run by inventors and not seasoned businessmen, and as a result does not produce proper feasibility studies or business plans, and cannot afford proper marketing. This is also the reason that 90% of investment proposals to venture capitalists are dismissed – different stages of development would gain value that could be monetised either when they effectively became new drugs or through their sale once certain milestones are met.

For large megafunds devoted to curing cancer, using historical databases and model calculations show that equity investors could get an average return of 8.9–11.4% while for bond holders returns would reach 5 or 8% depending on the level of seniority or subordination. The authors have presented other calculations for rare diseases that confirm that smaller megafunds could be statistically viable with smaller amounts of funding and projects. Ultimately, the capital need and portfolio size depends on its composition, development stage and disease area.

Megafunds based on portfolio theory and securitisation techniques have not yet been applied in science. In practice the application has mainly been limited to royalty funds that monetise the value of the intellectual property associated with already approved drugs. In other fields such as music or film royalties, securitisation techniques have been used. A possible way to support the novel concept of megafunds and large scale science development is to provide guarantees to the investors so that while the risk return profile of the investment improves, the public money is only disbursed in case of failure.

Panel 2: Intellectual Property Exchange

Members of the panel included **Birgitte Andersen, Dominic Young, Gavin Stewart,** and **Kirsten Kjaer Skott. Mattias Dinnetz** moderated the panel.

Birgitte Andersen, CEO of Big Innovation Centre, started off the session on IP exchange with a presentation on the organisation's Intellectual Property Exchange platform, along with an account of the global market for IP and suggestions for how to remedy the current illiquidity of this market.

Investments in intangibles now exceed those in tangible assets, which imply that the potential IP and know-how market is very substantial. Intangible assets embrace computerised information (software, databases and big data), innovative property (scientific and non-scientific R&D, copyrights, designs, and patents), and economic competencies (branding and reputation, firm specific human capital, business process innovations, and networks). While the total addressable IP exchange market is immense, particularly patents, utility models, trademarks, and industrial designs stand out as noticeable types of intangible assets in this context. Leading countries in this regard include China, Japan, India, Korea, USA, Canada, Brazil, Germany, and France.

A main issue is that, despite the massive addressable market, potential deals are to a great degree not being done, even as seller and prospective buyer can be identified. 40.2% of unlicensed IP belong to this category. In continuation, IP transactions can be

divided into three stages. In stage 1, 40.2% of unlicensed IP has a discernible seller and buyer, in stage 2, negotiation commences in 50.1% of cases, and in step 3, 56.3% of those instances result in concluded agreements. This mere 11% probability of a successful transaction is a sign of market failure. This failure in the market for IP is dependent upon three separate, underlying reasons: Firstly, there is a search issue, which means that there is no well-developed market in which sellers and buyers can meet. Secondly, contract negotiation involves too many parties and an onerous process that includes substantial bureaucracy and paperwork. Thirdly, there is a lack of agreed standards, norms and rules, and adding to this, lucid deal terms and mutual trust of potential traders are to a great degree absent. For patents there is a total brokerage commission of 25%, while the typical commission for residential real estate deals is not more than 5.3%, and for large and small capitalisation equities less than 1%.

The Intellectual Property Exchange proposes a global reach market with agents active in the space, in which standardisation, automation and IP commerce are important aspects. Standard documents for trade and reporting have been drafted to help build trust among traders. The simplified process slashes the number of stakeholders, thereby lowering the fees from 25% to 5%. Other actions to increase fluidity in the IP asset market involve improving current systems and features, by way of creating IP pavilions featuring the bundling or clustering of IP.

Dominic Young, Copyright Hub CEO, expanded on the market for copyright trade and the importance of establishing IP platforms.

The Copyright Hub is aiming to make licensing simpler. Its website can help getting permission to use somebody else's work, or finding out how copyright relates to different types of creative work. The building of open source tools to help copyright function in a manner akin to the way the internet works is also underway, with the aim of making the process of getting and giving permission quicker and easier for everyone.

In the realm of copyright, one of the defining issues of the business sector is that while the distribution of copyrighted works functions in a rather frictionless manner, copyright exchange does not. One of the traits is the populist nature of the internet, that is, attitudes of ordinary people, which seem negative about the protection and enforcement of copyright. To remedy this, new operational structures that ensures trust in the market are required, which will in turn make technology licensing sensible to the broader public and thereby increase market liquidity.

One aim is also to 'hide' the complexity of copyright, by attaching identifiers to content, which facilitates finding the owner and making it easier to get permission for use and deployment of creative works. The significance of this is that the system enables people to build a business model. The quality of works by participating creators/authors is often very high, and the purpose is to continuously attract new contributors.

One key issue is how this currently chaotic market will develop or can be helped to develop. The manner of advertising and making available works for license or transfer is up to the copyright owner, it can be done retail style, put on blogs, or in any other manner. Pricing also follows no particular rules, it is up to the copyright owner to set the price or give away for free – reaching agreements on terms such as identifiers is also a form of value. Placing identifiers on work would, thus, make trading easier. IP exchange platforms will carry vast incentives once it becomes clear that they are the path to legitimate distribution of intellectual property and not about protection and enforcement.

Gavin Stewart, Managing Director of the IP Division of the Globe Media Business Group, elaborated on current trends in the IP marketplace. Judging from the high number of transactions, there is a substantial global market for IP. A number of major publicly recorded IP-based deals involving both transactions and loans secured against IP and ranging between 350MUSD and 12.4BUSD, were mentioned. However, most deals are much smaller than this range and are not made public. Currently the vast majority of

deals are being done directly between companies rather than indirectly by means of brokers, and after a few years of decline numbers are now increasing.

The main technology areas in which assets are being sold are communication and software, followed by 'other', electronics, semiconductor, computer, medical, components, and wireless. US patents are considered the most valuable in spite of quality issues, while patents valid in Germany come second, UK patents being third.

Readers of Globe Media Business Group brand Intellectual Asset Management (IAM) – operating companies and Non Practicing Entities (NPEs) alike – confirm that prices of IP-based deals are generally falling, and refer to decisions handed down by US courts (in particular *Alice*), the winding down of the smartphone wars, as well as the increased availability of patents in the marketplace.

Drivers underlying IP deal making comprise

- the need for patents to ensure freedom to operate
- the aspiration to monetise patents
- the objective to keep assets out of the hands of possible asserters, and
- acquiring inventions for the improvement and expansion of forthcoming product lines.

Quality is a key issue in the search for IP assets, along with supporting information, e.g., claim charts and evidence of use. There is also growing interest in additional elements adjoining the intellectual asset itself, as companies are interested in securing know-how and connecting with technology providers by way of collaborative projects and contract research.

The Unitary Patent was highlighted as potentially providing specific advantages for European patent owners, thus also leading to value escalation relative to EPO granted patents. The US is seen as being an increasingly inimical environment for patent holders in the wake of the *Alice* judgement (which created uncertainty relating to patentability) and recent application of the IPR regime of the Patent Trial and Appeal Board (PTAB), making it more challenging to execute pre-litigation deals. There is evidence that patentees are already coming to European countries, such as the UK, France, and Germany, due to the notion that hearings will be more just in those jurisdictions.

The Unified Patent Court could, then, represent a novel venue for an improved IP market: its jurisdiction will have over 400M people, include four G8 economies, it will be cheaper to litigate than in the US, there will be a specialist court with no juries, and a quicker timeframe in case of a win along with the high likelihood of an injunction. Victories at the UPC could be used to drive global settlements. Moreover, the low costs associated with litigation, attorney fees, and the high quality of EPO grants, would deter patent troll type behaviour. Thus, the UPC will endow Europe with the opportunity to set patentability standards in many areas, e.g., biotech, telecommunication, and software. In continuation, if opportunity is grasped by stakeholders, this could lead to a surge in IP-backed financing, increased transparency in relation to ownership, and prospective gains in the field of research and development.

In November 2015 Globe Media Business Group set up an online platform named IAM Market, which already brings together 20 major companies, including, e.g., IBM, Intel, Google, Sony, Boeing, AT&T, and Philips. The online portal allows IP and technology owners to upload details of rights that they want to license, sell, or transfer, arranged by organisation, technology, and transaction type. As an example, Phillips lists technology portfolios and not individual patents, which indicates a more holistic standpoint in relation to what is going on in a technological area.

Participating companies pay a single fee to list assets to be made available on this international market. While the majority of exchange platforms in the past have involved services connected with valuation and negotiation, the IAM Market is strictly based on

brokerage. It allows a potential buyer to contact a seller anonymously, and then after an NDA has been signed, the trading parties proceed with the transaction on their own.

Kirsten Kjaer Skott, representing the Danish Patent and Trademark Office (DKPTO), explained the public IP Marketplace that was launched by the public authority in 2007. At the outset the exchange platform focused on patents and utility models only, and then in 2008 it was expanded to include also the listing of trademarks and designs. The solution allows both for listing IP rights for sale and the advertising for technologies, trademarks and designs sought. The marketplace is simple and user friendly, and also free of charge.

In order to achieve a higher number of listings and adverts, and a greater degree of exposure, co-operation has been established with a number of international organisations, e.g., WIPO (PatentScope), WIPO Green, Hong Kong Trade Development Council/Asia IP Exchange, The UK Intellectual Property Exchange, as well as with a range of European IP offices.

As the IP Marketplace is an initiative by a public authority there are some limitations as to actions that can be supported. Thus, while the platform facilitates contact between potential trading partners, thereby increasing the transparency for trade in know-how and IP rights, there can be no profits or involvement in specific negotiations. Thus, negotiations take place off-line, either directly between traders or via an intermediary. Feedback on deals is not required, which means that the number of deals done is not known. Connected with the IP Marketplace is the online IP Trade Portal, which aims at guiding IP traders in transactions. Hence, there is general information on IP trade, agreements, valuation, and IP trading statistics.

There are currently 766 patents, 206 trademarks, and 39 designs listed on the exchange, and about half of them are from European jurisdictions excluding Denmark. Asia and Oceania share second place, followed by Africa, North America, and South America. Geographically, the main search hits are from India, US and UK.

The DKPTOs strategy for the current year is to further expand participation in this international network and enter into additional co-operations, with the aim of facilitating the connection between the various national and regional initiatives. The emergence of both public and private interest and initiatives are noted in – among other places – Denmark, the UK, Benelux, Australia, and Singapore. The ultimate objective of this is to increase awareness and transparency in IP trade by setting up a global network of existing marketplaces.

Panel 3: IP Finance and Securitisation

The panel consisted of **Richard Blakesley**, **Matteo Cominetta**, **Charles Kerrigan**, **Raymond Hegarty**, and **Long Nguyen-Dinh**, and was moderated by **Vygandas Jankunas**.

Richard Blakesley, CEO of the Entrepreneurial Finance Hub, presented Quantiplay, which consists of a set of tools and services for the evaluation of intellectual property. The Hub's business model aims at connecting companies to different types of funding, including equity, crowdsourcing and debt finance. The Hub attempts to use intellectual property as collateral for loans to facilitate the raising of private capital for investments. A concept of IP insurance for financing was also introduced, whereby IP could be underwritten to valuation with premium by a fund and firms' insurance policy would be accepted as collateral for a loan.

Mr Blakesley held that the main issue is not one of lack of funding, but rather a risk invalidation gap, as it is difficult to explain value to investors who struggle to keep up with the rapid technological developments, which in consequence means that capital does not reach eligible companies. The core of the problem lies in the intellectual property, which needs to be properly scrutinised in order to reach an acceptable valuation, i.e., to

place a number on the asset. This is not done to any greater degree at the moment either by companies or investors.

Quantiply could provide a large volume of valuations for large portfolios and many companies in a short period of time, as it consists of an automated platform for this operation. A larger number of standardised valuations would counter the current opacity of funding knowledge in the market place.

Banks are not poised to bring in new financial products based on intellectual property on their own, and must therefore be helped. One suggested way is that insurance companies introduce a new product to be used in connection with the IP asset, thus reducing risk and making it fungible, i.e., transferable and with the ability to generate cash flow. This could be used as one of a number of ways to gradually move to more efficiency and transparency of equity and debt. To counter this, data needs to be built around IP driven transactions, which is needed to help lessen fragmentation of the market. Sufficient transparency and appropriate methods can reduce the distance between value and price.

Insurance policies need to be analysed in detail, while all specific factors that are potentially detrimental to IP value should be identified and dealt with. As an example, failure to properly manage IP might not detract from value as IP may still be high quality.

Matteo Cominetta, Policy Officer, Directorate-General Financial Stability, Financial Services and Capital Markets Union, European Commission explained the EU current regulatory framework with a specific focus on prudential requirements for credit institutions and investment firms (CRR) and the Commission's proposal for a Regulation on Simple, Transparent and Standardised Securitisation (STS) in light of EU Capital Markets Union. The securitisation of loans based on IP collateral could indeed be envisaged. Crucially, most securitisation of intangibles is not tranching, and this is important as the regulatory frameworks for pass through securitisation is completely different. Pass through securitisation is less heavily regulated and involves less due diligence, representing a considerable advantage for non-tranching IP securitisation. A more important obstacle to the successful issuance of IP securitisation is the high degree of uncertainty attached to the valuation of the IP assets. This indeed translates into improved estimation of errors of the credit risk and default correlation within the whole pool of assets, and in turn renders a clearer valuation of the complicated securitisation.

The pass through securities could be placed through a government agency (this is the case in the US with respect to the mortgage loans), a private conduit or a direct placement. In both Asia and the US there is pervasive public support of the securitisation market (e.g., in the US the Federal Reserve backs up to 60% of the mortgage backed securities) which explains the resurgence of US securitisation after the 2008 debacle. In the EU there is as yet no public sector sustenance, but the clear externalities given by monetising the IP assets could justify public support.

Charles Kerrigan, Partner and Head of the Banking & Finance International Practice Group, Olswang, recalled the basics of securitisation and highlighted a need for a greater understanding of lenders' objectives, i.e., contractual income, estimating future net cash flows, setting the interest rate for Net Present Value (NPV) calculations, computing the NPV of future cash flows. Concerns were also raised on the lack of historical data for cash flows derived from IP. Financial institutions need this type of data. There is also a need for harmonised rules on IP and valuation methods. Significant differences exist between the EU, the US and Asian jurisdictions. This restricts international exploitation of IP assets and means there is no common standard for international investors.

Trading in IP would benefit from diversified IP portfolios being held by investors to mitigate and spread the impact of default risk in individual assets. Governments could assist by providing directed financial support to unlock the potential of IP markets. Transparency and access to information is needed. IP finance contracts ('smart contracts') could be codified, and it would be very interesting to see IP loan agreements produced in this way.

Since data is significant in assisting lenders reach decisions in relation to their loans more data being freely available in the public domain and/or available from public source records should help to increase the supply of investor finance into IP markets.

Funders in Europe tend to be banks, while in the US market lending is carried out by a greater range of institutions. The US has a broader pool of lenders and more liquidity in comparison with the EU. Lenders in the Euro market work on the basis of funding operating business cash flows. This is prudent and well understood but closes off some opportunities in relation to IP rich businesses. Again the issue of valuation is of key importance, and valuation processes should become more reliable with more data.

Educating key actors is also an important task both regarding IP and securitisation. The rules and principles of intellectual property should be explained to non-experts, including lenders and investors.

Secured lending law varies between jurisdictions and this adds cost and complexity to finance transactions.

Raymond Hegarty, Vice President for International Licensing, Intellectual Ventures, advocated a need for diversification of IP portfolios, with particular reference to patents. Valuation of IP is based on market, technology, financial and legal issues and exposures. The intellectual property cannot in itself be securitised, but rather the income flowing from them. It must be remembered that patents are not tangible, and that each comprises a unique set of claims to a novel technology. Adding to this is that patent documents are very hard to read, even further increasing risk and opacity.

Intellectual Ventures has reviewed 400.000 patents for potential acquisition, acquired 80.000 of them, and by way of an internal scrutinising process shrunk this number to currently around 40.000 patented technologies under management. This process comprises technical, financial, and legal analyses. The technology analysis focuses on industry categories and the identification and contacting of key players in each of them, the financial analysis takes into account current and future commercial value of the technology and the legal analysis appreciates potential legal risks connected with the assets. Further, the integrity of patent families is an issue that emerges in due diligence, as is chain of title, in which problems in up to 60% of the cases can be identified. The procedures relating to sourcing, valuing, price and contract negotiations, and due diligence are very costly and complicated, and therefore normally not at the disposal of SMES. Similarly, the activities of Intellectual Ventures are a valuable and cost-effective service for large corporations.

Long Nguyen-Dinh, Investment Director, France Brevets. France Brevets is a sovereign fund focused on patents that was established in 2011 that focuses on licensing, investing in the development of patents jointly with R&D partners, lobbying, due diligence, patent strategy and IP finance.

This presentation dealt with IP as a means to secure finance for innovative SMEs. One financing offer consists of standard loans with patents as collaterals, and the other is securitisation of licensing revenues, i.e., future cash flows securitised in exchange for upfront payments.

The view on worldwide market practice with respect to IP financing offers was also presented, specifically in the US, China, Malaysia, South Korea and Singapore. It is clear that dedicated policy and funding instruments in relation to IP are to a high degree lacking in the EU when contrasted with existing measures in Asia.

The opportunity for Europe lies in the untapped source of financing for companies, but a number of key challenges also exist in the field. Banks generally have little experience in patents and IP in general, patent valuation is more of an art than science, patent valuers are scarce, IEEE/FRAND rate calculations may restrict revenue, European companies' patent portfolios are to a greater degree than those of Asian counterparts of variable value, and there are currently no European level organisation that offers to act as guarantor.

An idea of an IP loan pilot in the EU was, moreover, briefly presented. The suggested approach would include the following consecutive phases and actors: 1, Commercialisation and IP valuation experts, 2, guarantors, 3, financial intermediaries, and 4, and financial beneficiaries, i.e., companies owning a suggested more than 10 patent families.

Conclusions

Essential benefits for society are anticipated in relation to the utilisation of intellectual property as an asset *on a par* with any other tradable asset. A well-functioning IP asset market would make a greater number of valuable intangibles available for the market, resulting in a stepped up innovation rhythm. More efficient IP exchange and IP-backed securitisation would provide a novel resource for the financing of RD&I, being neither debt nor equity finance, which could bolster SME growth, as well as provide funds for capital and patience intensive innovation undertakings. A firm new asset category in the market should also invigorate the securitisation market, which is steadily growing in the US and Asia, while still remaining relatively restricted in Europe.

A number of central challenges need to be trounced in order to accomplish the vision of a well-functioning market for intellectual property. Firstly, as the liquidity of the underlying IP asset market is indispensable for the proper functioning of the whole IP market – conjointly consisting of the IP asset market and the IP financial market – several issues relating to its illiquidity and opaqueness need to be disentangled. Among these, the valuation of intellectual property emerges as a key underlying concern, particularly in relation to the collateralisation and securitisation of patents and patent portfolios. Other issues include building trust among key actors, the educating of the financial sector with regards to IP related issues, and improved reporting and accounting standards for IP so as to increase SME investment readiness.

The complexity of innovation is such that rarely is there a single inventor for any given innovative product or service, and hence there is a need to exchange and bundle inventions and intellectual assets that stem from different sources. A main challenge is to rebalance the intangibles based economy: the main focus should be to establish a new system in which the patents are not only a protection and legal redress net but also a technology transfer instrument and a valuation and transaction asset.

It appears as if SMEs spun out from universities have the greatest problems in accessing invention exchanges and IP monetisation, in full contradiction with their leading role in innovation for the economies. It is not possible to properly value such companies, as they are run by inventors and not seasoned businessmen that do not produce proper feasibility studies or business plans, and cannot afford proper marketing. This is also the reason that 90% of investment proposals to venture capitalists are dismissed. So the major challenge lies in the valuation of start-ups, due to the frequent, inherent, immaturity of proposed products, processes and services.

The Unitary Patent is highlighted as potentially providing specific advantages for European patent owners, thus also leading to value escalation relative to EPO granted patents. The Unified Patent Court could represent a novel venue for an improved IP market: its jurisdiction will have over 400M people, include four G8 economies, litigation will be cheaper than in the US, there will be a specialist court with no juries, and a quicker timeframe in case of a win along with the high likelihood of an injunction. Victories at the UPC could be used to drive global settlements. Moreover, the low costs associated with litigation, attorney fees, and the high quality of EPO grants, is foreseen to deter patent troll like behaviour.

In relation to open innovation, the main challenge lies in protecting intellectual property while the research and development related results must be shared intelligently depending on the degree of contribution in the joint work. The essential feature is that such solutions comprise both exclusive and shared IP and non-exclusive royalty free licences for partners in the context of the collaboration. Patents are becoming more important, and now embrace results stemming from research and development relating to combined software-hardware systems, and from multi-disciplinary technology syntheses. Current open innovation models might be more suitable for larger corporations that are normally not basing their existence on a single application or technology; SMEs are often built upon one technology and are thus very vulnerable to

losing the rights to it, while larger corporations frequently have less risk exposure to product/process/service diversification.

In the field of biomedical innovation, there is a common notion that the bench-to-bedside process of translating biomedical research into effective therapeutics is broken. To address this flaw in the innovation system a financial structure based on portfolio theory has been proposed, in which a large number of biomedical programs at various stages of development are funded by a single entity, in order to substantially reduce the portfolio's risk. Thus, a new generation of intelligent, diversified and versatile investment vehicles is needed, which, in order to provide with the risk and return features desired, could be formed of large and diversified pools of assets under management and capital ranging between 5 and 15 BUSD. Such megafunds could attempt to target and derisk earlier development steps in the process of capital and patience intensive projects, such as, e.g., drug development, and support the drug's progress through the various transitory phases towards the marketplace.

IP exchange platforms are foreseen to carry vast incentives once it becomes clear that they are the path to legitimate distribution of IPRs and not mainly about protection and enforcement of such rights.

The general failure in markets for IP is dependent upon the following main underlying reasons:

- there is as yet no well-developed market in which sellers and buyers can swiftly identify one another
- contract negotiation currently involves too many parties and an onerous process that includes substantial bureaucracy and paperwork,
- there is a lack of agreed standards, norms and rules, and adding to this, lucid deal terms and mutual trust of potential traders are to a great degree absent
- too few patents are listed
- there is a lack of possibility to bundle patents
- there is no possibility to fix prices, and,
- an absence of due diligence or validity guarantees.

In the realm of copyright, one of the defining issues of the business sector is that while the distribution of copyright works functions in a rather frictionless manner, exchange does not. One of the central traits of this market is the populist nature of the internet, that is, attitudes of ordinary people, which seem negative about the protection and enforcement of copyright.

Public initiatives, such as the Danish IP Marketplace, can have a definite advantage over private counterparts. Being not-for-profit can enable longevity, in that platform is not driven by the market. However, normally there are some limitations as to actions that can be supported under the patronage of the public authority in question. Thus, while platforms of this type facilitate contacts between potential trading partners, thereby increasing the transparency for trade in know-how and IP rights, there can be no profits or involvement in specific negotiations. Thus, negotiations take place off-line, either directly between traders or via an intermediary. Feedback on deals is not required, which means that quality and number of deals done are not known. The ultimate objective of increased awareness and transparency in IP trade can be assisted by linking existing marketplaces – both public and private – to help a global network of platforms to materialise.

Banks are not poised to bring in new financial products based on intellectual property on their own, and must therefore be helped. The main issue of finance for SMEs funding is not one of lack of funding, but rather a risk invalidation gap, as it is difficult to explain

value to investors who struggle to keep up with the rapid technological developments, which in consequence means that capital does not reach eligible companies.

The core of the problem, again, lies in the fact that intellectual property needs to be properly scrutinised in order to reach an acceptable valuation, i.e., to place a number on the asset. This is currently not done to any greater degree at the moment either by companies or investors. To improve this situation data needs to be built around IP driven transactions, which is needed to help lessen fragmentation of the market. Sufficient transparency and appropriate methods can reduce the distance between value and price. Insurance policies need to be analysed in detail, while all specific factors that are potentially detrimental to IP value should be identified and dealt with.

Most securitisation of intangibles is not tranching, and this is important as the regulatory frameworks for pass through securitisation is completely different. Pass through securitisation is less heavily regulated and involves less due diligence, representing a considerable advantage for non-tranching IP securitisation. An important obstacle to the successful issuance of IP securitisation is the high degree of uncertainty attached to the valuation of the IP assets. This indeed translates into improved estimation of errors of the credit risk and default correlation within the whole pool of assets, and in turn renders a clearer valuation of the complicated securitisation. The pass through securities could be placed through a government agency (this is the case in the US with respect to the mortgage loans), a private conduit or a direct placement. In both Asia and the US there is pervasive public support of the securitisation market (e.g., in the US the Federal Reserve backs up to 60% of the mortgage backed securities) which explains the resurgence of US securitisation after the 2008 debacle. In the EU there is as yet no public sector sustenance, but the clear externalities given by monetising the IP assets could justify public support.

Trading in IP would benefit from diversified IP portfolios being held by investors to mitigate and spread the impact of default risk in individual assets. Financial institutions need historical data for cash flows derived from IP. Governments could assist by providing directed financial support to unlock the potential of IP markets. Valuation of IP must be based on market, technology, financial and legal issues and exposures. The intellectual property should not in itself be securitised, but rather the income flowing from them. It must be remembered that patents are not tangible, and that each comprises a unique set of claims to a novel technology

The opportunity for Europe lies in the untapped source of financing for companies, but a number of key challenges also exist in the field. Banks generally have little experience in patents and IP in general, patent valuation is more of an art than science, patent valuations are scarce, IEEE/FRAND rate calculations restrict may restrict revenue, European companies' patent portfolios are to a greater degree than those of Asian counterparts of variable value, and there are currently no European level organisation that offers to act as guarantor.

Possible ways forward

The presentations and subsequent discussions over the course of the workshop day gave rise to a number of suggestions in support of IP market development, and intensified deployment of IP backed collateralisation and securitisation. In particular increased awareness and ambitions of both public authorities and private actors were called for.

There was common agreement that valuation of intellectual property assets, with particular reference to patents, is the key to a well-functioning IP market. Along the lines of this, there was an appeal for European level regulation of a provision for certification of IP asset valuers, as well as to develop standardised methods for valuation to increase transparency.

The collective notion was also that the establishment of a European public institution acts as a guarantor for securities, as is the case in the US and in Asia. In this manner, the public sector would in addition to providing R&D grants also make available guarantees to motivate private investment in the commercialisation of innovation results.

A further critical point that emerged was to the need to build trust and understanding in the financial community in relation to intellectual property and in the use of methods for valuation of assets such assets. One suggested way of attempting to accomplish this would be to convene closed door, discrete discussions with key actors in the field to build trust and understanding.

Appendix I: Background note on IP banking and trade

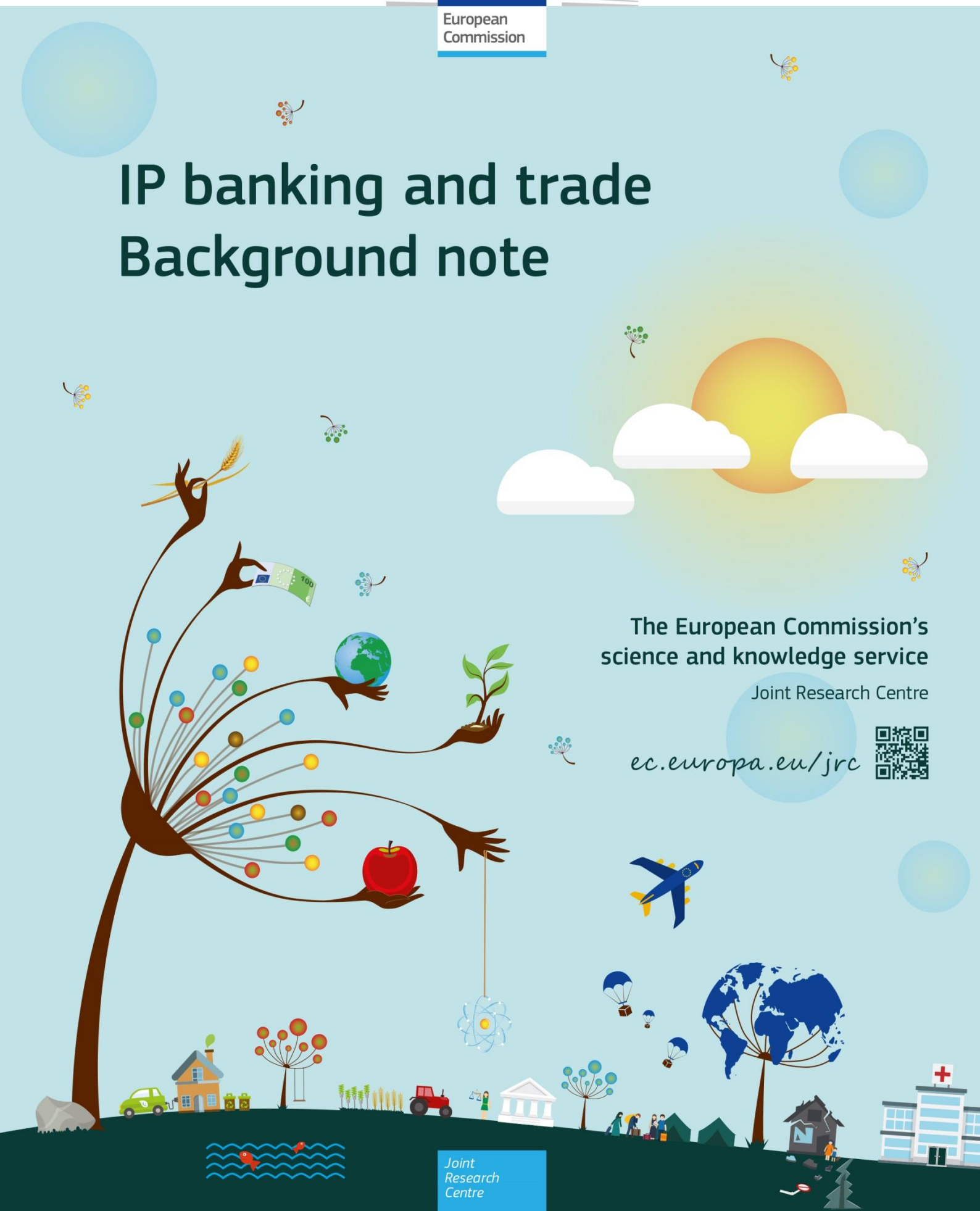
IP banking and trade

Background note

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IP Exchange and Finance

Introduction

This background note aims at providing a cursory overview of issues emerging in the literature in relation to the use of patents and other intellectual property rights – such as trademarks and copyright – as collateral. It also more generally addresses the issue of trade in IPRs. The private and public sectors alike invest massively in R&D and innovation, activities that generate key business assets in the guise of intellectual property and associated intangibles. Efforts are underway to unlock the potential of these assets, which is foreseen both to step up innovation pace and to benefit the financial markets.

Background

There is growing interest in the possibilities and potential of using the traditionally illiquid IP assets to raise finance, which, thus, provides an additional alternative alongside debt and equity financing. Such IPR-based deals pertain to a class known as operating-asset securitisation. The difference in comparison with standard securitisations of future revenues, such as bonds backed by the payments on mortgages or loans, is that the borrower has to make the asset work. If investors are to retrieve their money assets used as collateral must be actively exploited to enable the foreseen various types of revenues.¹ Some commentators have also argued the prominence of IP asset securitisation over more traditional methods of financing, such as bank lending, issuance of corporate bonds, and venture capital funding.²

Knowledge-based capital

Investment and growth in OECD economies is increasingly driven by investment in intangible assets, also known as knowledge-based capital (KBC). In many OECD countries, firms now invest as much or more in KBC as they do in physical capital such as machinery, equipment and buildings.^{3,4} However, even as IPRs and intangibles make up 90% of corporate net worth,⁵ the market for using such assets as collateral to raise finance is still in its cradle. This certainly points to some current weaknesses of this asset class, but there are convincing arguments indicating the possibility of the international legal framework to address such shortcomings and to accommodate sound integration of IP securitisation within the financial market.^{6,7}

IPRs have traditionally constituted rather illiquid assets that do not readily lend themselves to securitisation, and this can be observed both in the case of single assets and asset portfolios.^{8,9} The role of intellectual property is, however, undergoing a process of alteration. While the original idea of IPRs was to provide economic incentives,

¹ <http://www.economist.com/node/7068382>.

² E.g., Solomon, D. and Bitton, M. 2014. Intellectual Property Securitization. <http://www.cardozoaj.com/wp-content/uploads/2014/01/Solomon-Bitton-Final.pdf>

³ Enquiries into Intellectual Property's Economic Impact. OECD (2015): <http://www.oecd.org/sti/ieconomy/intellectual-property-economic-impact.htm>

⁴ Brassell, M. and King, K. 2013. Banking on IP? UK Intellectual Property Office.

⁵ <http://www.economist.com/node/7068382>.

⁶ Dreyfuss, R. and Frankel, S: From incentive to commodity to asset: how international law is reconceptualizing intellectual property. <http://repository.law.umich.edu/cgi/viewcontent.cgi?article=1083&context=mjil>.

⁷ Sweeney, G. Patent-Backed Securitization for Innovation and Economic Growth in the Life Sciences: A Proposal for Incremental Securities Law Reform. <https://ojs.library.dal.ca/CJLT/article/view/6003>.

⁸ Risch M. 2013: Patent Portfolios as Securities. <http://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=3396&context=dlj>.

⁹ Dov Solomon and Miriam Bitton, Intellectual Property Securitization, 33 Cardozo Arts & Ent. L.J. 125 (2015).

current international law progresses towards the conceptualising of IPRs as being commodities, and further towards accentuating the asset function.¹⁰

Small and medium-sized enterprises (SMEs) are poised to play a vital part in a well-functioning IP market. SMEs are widely recognised as the backbone of many developed economies, and that their ability to grow is a key determinant of future economic health. In recent years, businesses of all sizes have been investing more in intangible assets, in particular intellectual property, than in fixed or physical assets. It is therefore assumed that the development of an IP securitisation market will depend upon the extent to which it is possible for SMEs to wield these assets to secure the finance they need for company strategy and growth.¹¹

The IPR Market

The IPR market is composed of two parts, i.e., the IPR asset market and the IPR financial market. In order to operate well, the IPR financial market requires the proper functioning of the underlying IPR asset market.¹² Currently the IPR asset market is characterised by a high degree of inertia, and particularly when it comes to patents.

The illiquidity of certain types of intellectual property rights amounts to failure from the market standpoint. This deficiency manifests itself in the difficulty to clearly describe quality and value of intellectual property rights, which makes it demanding for parties to agree on the economic value of the asset to be transferred or licensed. The high degree of opacity thus precludes efficient IP asset market clearing. This tendency appears to be particularly accentuated for assets generated by universities, and in the case of patents, moreover, is further aggravated by the difficulty to identify potential IPR buyers.¹³ Thus, the main obstacles for a well-functioning IP asset market entail¹⁴

- Difficult acquirer identification
- Long periods of negotiation
- Extensive due diligence activities
- Sellers and buyers have very differing price expectations.

In addition, the US Federal Trade Commission (2011) has noted the importance of patent quality for market efficiency.¹⁵

In the EU context, the Expert Group on Patent Aggregation (2015) has highlighted the current weaknesses of patent markets and recommended that high patent quality should be ensured particularly in view of the Unitary Patent and Patent Court. The Expert Group moreover suggested, that patent ownership and eventual assignment be registered, along with the willingness to license out patents. They also analysed IP-exchange mechanisms and recommended raising awareness about the existing platforms among SME, rather than setting up a publicly funded platform at EU level¹⁶

Various IP exchange platforms have been established over the past decade or so attempting to address the obstacles to a higher degree of market clearance. As an

¹⁰ Dreyfuss, R. and Frankel, S: From incentive to commodity to asset: how international law is reconceptualizing intellectual property. <http://repository.law.umich.edu/cgi/viewcontent.cgi?article=1083&context=mjil>.

¹¹ Brassell, M. and King, K. 2013. Banking on IP? UK Intellectual Property Office. <https://www.gov.uk/government/publications/banking-on-ip>

¹² Final report for EU Tender No 3/PP/ENT/CIP/10/A/NO2S003 "Creating a financial market for IPR". http://tt.uni-jena.de/inf_tfmedia/de/Publikationen/Maicher+et+al_2011_Creating+a+financial+market+for+ipr.pdf

¹³ Andersen, B. and Rossi, F. 2011: Inefficiencies in Markets for Intellectual Property Rights:

Experiences of Academic and Public Research Institutions. http://final.dime-eu.org/files/Andersen_Rossi_A6.pdf.

¹⁴ Final report for EU Tender No 3/PP/ENT/CIP/10/A/NO2S003 "Creating a financial market for IPR". http://tt.uni-jena.de/inf_tfmedia/de/Publikationen/Maicher+et+al_2011_Creating+a+financial+market+for+ipr.pdf

¹⁵ Federal Trade Commission. 2011. The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition: A Report of the Federal Trade Commission. www.ftc.gov/opa/2011/03/patentreport.shtm.

¹⁶ Report of the Expert Group on Patent Aggregation. 2015. http://ec.europa.eu/research/innovation-union/pdf/expert-groups/report_of_the_expert_group_on_patent_aggregation_-_2015.pdf#view=fit&pagemode=none.

example, IPXI was set up by Ocean Tomo in 2009 with the aim of being a fully transparent patent license exchange enabling companies to buy, sell, and hedge patent rights just like any other asset. The aim was to provide this service simpler, faster, and cheaper than the onerous process of negotiating bilateral licenses for intellectual property. The high cost related to bilateral parleys to a great degree precludes small companies from entering the game, leaving patents unexploited, thus slowing down the pace of innovation.¹⁷ The quintessence of IPXI's approach was to be the unit license right (ULR). Inventions made available for license on the exchange were to be divided into a number of ULRs available for purchase. IPXI ceased to operate in 2015, and it appears that its basic flaw was the assumption that good faith deal-making is what incentivises both sides in a licensing negotiation. Instead, the current legal environment in the US favours the potential infringer and not the licensor, which makes it less attractive for potential licensees to negotiate with licensors in good faith than to wait for court proceedings.¹⁸ Examples of public or semi-public IP exchange platforms include the Intellectual Property Exchange in the UK,¹⁹ Japan's Life Science Intellectual Property Platform Fund,²⁰ France Brevets,²¹ Intellectual Discovery (Korea),²² and the Danish IP Trade Portal.²³

Building confidence in IP as collateral in the finance and commercial sectors has been identified as an essential issue for the pursuit to bolster the opportunities for IP-rich SMEs to raise growth finance.²⁴ One prerequisite to create such increased confidence is the accurate valuation of IP, which persists as a major impediment to their emergence as a tradable asset class. There are several generally accepted methods to measure IP value, but a higher degree of transparency in IP valuation procedures is expected to make trade in IP rights substantially more efficient and profitable than the current state of the art.²⁵

The securitisation market and IPR-backed pass-through securities

Since the outset of the financial crisis the EU securitisation markets have largely remained downcast, sliding from €594 billion in 2007 to about €216 billion in 2014, and for SMEs the issuance levels amounted to €77 billion versus €36 billion for the same years. In comparison with the EU it appears that recovery is substantially stronger in the US. This is due to the fact that a substantial share of the US securitisation instruments enjoys public guarantees from Government Sponsored Enterprises, the Federal Reserve System ('the Fed') intervened massively in support of these markets, now owning 30% of all outstanding mortgage-backed securities, and that banks investing in such instruments benefit from lower capital charges. The EU grapples with a number of key dynamics that limit recovery, such as macroeconomic conditions, regulatory uncertainties, access to cheaper sources of refinancing, and certainly also the bad reputation associated with the asset class.²⁶

In the first eight months of 2015 China rose to become the largest securitisation market in Asia, up to \$26.3 billion from \$20.8 billion in the same period the previous year. This is a result of increasing its efforts to expand securitisation to lower financing costs for companies and increase investment opportunities, which was enabled by Chinese regulators beginning to allow local provincial bank regulators to approve Chinese commercial banks' new issuance.²⁷

¹⁷ <http://www.economist.com/node/21554540>.

¹⁸ <http://www.iam-media.com/blog/detail.aspx?g=93e8d407-b24c-4d9a-a59c-da9fe9e3f578>.

¹⁹ <https://www.ipexchange.global>.

²⁰ <http://www.incj.co.jp/PDF/1281073862.01.pdf>.

²¹ <http://www.francebrevets.com/en>.

²² <http://www.i-discovery.com/site/eng/overview/about.jsp>.

²³ <http://www.dkpto.org/updates/2012/ip-trade-portal-.aspx>.

²⁴ Brassell, M. and King, K. 2013. Banking on IP? UK Intellectual Property Office.

<https://www.gov.uk/government/publications/banking-on-ip>

²⁵ European Commission Expert Group on Intellectual Property Valuation. 2013.

<http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetail&groupID=2863>.

²⁶ EU Capital Markets Union. http://europa.eu/rapid/press-release_MEMO-15-4434_en.htm?locale=en.

²⁷ China Becomes Asia's Biggest Securitization Market. <http://www.wsj.com/articles/china-becomes-asias-biggest-securitization-market-1443082192>

Although the IP-backed securitisation market is still immature, there are prominent examples of deals involving IP securities. One of the first and best known instances of a bond using intellectual property in the form of copyright as underlying collateral is the 1997 *Bowie bond*, by which the artist temporarily signed away his rights to revenues in return for a payment of \$55 million.²⁸ Sears Holdings Corporation made a notable IP-backed deal in 2006 worth \$1.8 billion, which involved three of its three biggest brands/trademarks, i.e., Kenmore, Craftsman and DieHard. This was executed by transferring the ownership of the brands to a newly created, separate IP holding company that charges Sears royalties for licenses to the said brands.²⁹ The Bowie bonds were so-called 'pass-through securities', that is, they were not tranching. This is a key issue, since under current international legislation a securitisation is defined as such only if involving tranching. It is unclear whether or not the challenging valuation of IP would indeed permit tranching, and if not, securities backed by IPR fall outside the securitisation regulatory framework. This would not necessarily pose a problem or obstacle to the market development, but nevertheless has important regulatory implications.³⁰

In the realm of patents, particularly the biotechnological and pharmaceutical industries stand out as applying securitisation as a novel means of raising finance. These businesses face major trials of their existing business models due to expiring drug patents, diminishing risk willingness of venture capitalists and other investors, and growing intricacy in translational medicine. In reaction to these challenges, new alternative investment companies have emerged to bridge the funding gap by acquiring economic interests in current and future drug royalty streams. Such deals allow universities and companies to monetise their intellectual property, allowing a higher degree of financial flexibility while providing investors with an opportunity to participate in the life sciences industry at lower risk.³¹ It has proposed that by creating diversified portfolios of biomedical projects financed by more persistent capital, biopharma entrepreneurs can improve the risk-adjusted revenues of their undertakings and access novel sources of capital, e.g., retail investors, pension funds, insurance companies, sovereign wealth funds, among other institutional investors.³²

Concluding remarks

As part of the endeavour to accelerate innovation pace and to galvanise financial markets there have been attempts to increase fluidity in the market for intellectual property. There is common agreement that a higher degree of liquidity is required to unravel the potential of intellectual property assets. The IP market in its entirety consists of two intimately related markets, that is, the IP asset market and the IP financial market.

A number of advantages are foreseen in relation to the function of intellectual property as an asset *on a par* with any other tradable asset. A well-functioning IP asset market would make a greater number of valuable inventions available for the market, with the result of stoked innovation. More efficient securitisation using IP would provide a novel means of financing RD&I that is neither debt nor equity finance, which could bolster SME growth, as well as provide funds for capital and patience intensive undertakings, such as the development of new medicines. A solid new asset class in the market should also energise the securitisation market, which is steadily growing in the US and Asia, while still remaining relatively curtailed in Europe.

²⁸ Financial Times. A short history of the Bowie Bond. <http://ftalphaville.ft.com/2016/01/11/2149761/a-short-history-of-the-bowie-bond>.

²⁹ Sears Reinsurance and Securitization Transactions. https://searsholdings.com/docs/investor/Sears_Re_Presentation_March_2014v2.pdf

³⁰ Cominetta, M. June 6, 2016. Personal communication.

³¹ Lo, A. W. et al., New Financing Methods in the BioPharma Industry: A Case Study of Royalty Pharma, Inc. <http://lfe.mit.edu/wp-content/uploads/2015/08/RoyaltyPharma2014.pdf>.

³² Forman, S. M., Lo, A. W., Shilling, M. and Sweeney, G. K. Funding translational medicine via public markets: the business development company. <https://www.joim.com/wp-content/uploads/emember/downloads/p0501.pdf>.

A number of central challenges need to be overcome to accomplish the vision of a well-functioning market for intellectual property. Firstly, as the liquidity of the underlying IP asset market is indispensable for the proper functioning of the whole IP market (i.e., IP asset market + IP financial market), different issues relating to its illiquidity and opaqueness need to be addressed. Particularly in the case of patents, the asset market needs to clear before full-fledged securitisation can take place, and this is to a great degree dependent upon the accurate and transparent valuation of IP. Also changes in the international legal frameworks are needed to fully accommodate IP as a traded asset, which likewise would embrace actions to increase patent quality. In relation to the use of IP as collateral in a well-functioning IP financial market, confidence in this asset needs to spread in the finance and commercial communities.

Appendix II: Workshop Programme



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08:30 - 09:00 **Registration and welcome coffee**

09:00 - 09:30 **IP Exchange and Finance: an Untapped Opportunity?**

Moderator: **Giancarlo Caratti**, Head of Unit, Directorate-General
Joint Research Centre, European Commission

Maive Rute, Deputy Director-General, Directorate-General
Joint Research Centre, European Commission

Robert Madelin, Senior Adviser for Innovation, European Commission

Will Hutton, Chairman, Big Innovation Centre

09:30 - 11:00 **Intellectual Property for Innovation in the Knowledge Economy**

Rapporteur: **Patrick Mc Cutcheon**, Directorate-General Research
and Innovation, European Commission

Patrick Terroir, Chair, Patent and Technology Licensing Committee,
Licensing Executive Society International

Ian Brewer, Valuation Consulting

Nikolaus Thumm, Senior Fellow, Directorate-General Joint Research
Centre, European Commission

Ludo Deferm, Executive Vice-President, Corporate, Business
and Public Affairs, IMEC

José María Fernández, Director General del Teosoro, Secretaria General del
Tesoro y Política Financiera, Ministerio de Economía y Competitividad

11:00 - 11:30 **Coffee break**

11:30 - 13:30 **Intellectual Property Exchange**

Rapporteur: **Mattias Dinnetz**, Directorate-General Joint Research Centre,
European Commission

Birgitte Andersen, CEO, Big Innovation Centre

Dominic Young, CEO, Copyright Hub

Gavin Stewart, Managing Director, IP Division, Globe Business Media
Group

Kirsten Kjær Skott, The Danish Patent and Trademark Office

13:30 - 14:30 **Networking lunch**

14:30 - 16:00

IP Finance and Securitisation

Rapporteur: **Vygandas Jankunas**, Policy Officer, Directorate-General Research and Innovation, European Commission

Matteo Cominetta, Policy Officer, Directorate-General Financial Services and Capital Markets Union, European Commission

Richard Blakesley, Entrepreneurial Finance Hub

Charles Kerrigan, Head of the Banking & Finance International Practice Group, Olswang

Jeremy Salesin, Vice President Acquisitions, Intellectual Ventures

Long Nguyen-Dinh, Director, Business & IP Strategy, France Brevets

16:30 - 16:15

Coffee break

16:15 - 17:30

Discussion on Possible Ways Forward at EU level and Closing

Moderator: **Alessandro Fazio**, Policy Officer, Directorate-General Joint Research Centre, European Commission

Patrick Terroir, Chair, Patent and Technology Licensing Committee, Licensing Executive Society International

Patrick Mc Cutcheon, Directorate-General Research and Innovation, European Commission

Mattias Dinnetz, Directorate-General Joint Research Centre, European Commission

Vygandas Jankunas, Policy Officer, Directorate-General Research and Innovation, European Commission

Closing remarks: **Maive Rute**, Deputy Director-General, Directorate-General Joint Research Centre, European Commission

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